

What is claimed is:

1. Lubricant base oil consisting essentially of a normal paraffin and an isoparaffin, and satisfying the following requirements (a) and (b):

(a) an average carbon number  $N_c$  in one molecule is not less than 28  
5 but not more than 40; and

(b) an average branch number  $N_b$  in one molecule, which is derived from a ratio of  $\text{CH}_3$  carbon to total carbon determined by  $^{13}\text{C}$ -NMR analysis and the average carbon number  $N_c$  in one molecule is not more than  $(0.2N_c - 3.1)$  but not less than 1.5.

10 2. Lubricant base oil according to claim 1, which is obtained from an isomerization of a starting straight-chain hydrocarbon material having an average carbon number  $N_c$  in one molecule of not less than 25.

3. Lubricant base oil according to claim 2, wherein the starting straight-chain hydrocarbon material is a Fischer-Tropsch synthetic wax.

15 4. A method of producing lubricant base oil according to claim 3, which comprises subjecting starting oil composed of a Fischer-Tropsch synthetic wax having a 10% distillation temperature of not lower than  $360^\circ\text{C}$  to an isomerization under a condition that a decreasing ratio of a fraction having a boiling point of not lower than  $360^\circ\text{C}$  is not more than  
20 40% by weight.

5. A method of producing lubricant base oil according to any one of claims 1 to 3, which comprises the following steps:

(1) hydroisomerizing a starting straight-chain hydrocarbon material in a first reactor;

25 (2) separating oil obtained by the hydroisomerization into a fraction mainly composed of a normal paraffin (fraction  $\alpha$ ) and a fraction mainly composed of an isoparaffin (fraction  $\beta$ );

(3) hydroisomerizing the fraction  $\alpha$  in a second reactor, and mixing oil obtained from the hydroisomerization (fraction  $\gamma$ ) with the fraction  $\beta$ .

30 6. A method according to claim 5, wherein the hydroisomerization in the second reactor is carried out under a reaction condition that a decreasing ratio of a fraction having a boiling point of not lower than  $360^\circ\text{C}$  in the hydroisomerization at the second reactor is lower than a

decreasing ratio of a fraction having a boiling point of not lower than 360°C in the hydroisomerization at the first reactor.

7. A method according to claim 5, wherein the starting straight-chain hydrocarbon material is a Fischer-Tropsch synthetic wax.

5 8. A method according to claim 7, wherein the Fischer-Tropsch synthetic wax has an average carbon number  $N_c$  of not less than 25.

9. A method according to claim 5, wherein the hydroisomerization in the first reactor is carried out under a reaction condition that a decreasing ratio of a fraction having a boiling point of not lower than  
10 360°C is not more than 50% by weight.